

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appl. No. 09/242,490

wherein the first ink supply path is located upstream of the second ink supply path in a direction in which ink is supplied from the ink cartridge to the recording head, and wherein the cross sectional area of the first ink supply path is substantially constant over an entire length of the first ink supply path.

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### REMARKS

Claims 1-28 have been examined. Claims 20-27 have been rejected under 35 U.S.C. § 102(b), and claim 28 has been rejected under 35 U.S.C. § 102(e). The Examiner also indicates that claims 1-19 have been allowed.

#### I. Rejection under 35 U.S.C. § 102(b) over U.S.P. 4,368,748 to Koto ("Koto")

Claims 20-27 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Koto.

##### A. Claim 20

Applicants submit that claim 20 is patentable over Koto. For example, claim 20 relates to an ink supply passage structure comprising a first ink supply path and a second ink supply path, and the first ink supply path axially terminates at a first open end.

Also, the second ink supply path is (1) extends from the first open end of the first ink supply path, (2) has a cross sectional area that is at least as large as the cross sectional area of the

first ink supply path, (3) has a protrusion and/or groove that axially terminates at the first open end of the first ink supply path, and (4) is located downstream from the first ink supply path.

The Examiner contends that Fig. 3 of Koto suggests the claimed first and second ink supply paths. For example, he contends that the portion of the chamber 55 that includes the porous member 54 corresponds to the claimed first ink supply path and that the portion of the chamber 55 that contains the passages 56 corresponds to the second ink supply path. However, the “first ink supply path 55/54” is located downstream of the “second ink supply path 55/56”, and thus, such components do not suggest a second ink supply path that is located downstream of the first ink supply path.

Also, assuming *arguendo* that the “second ink supply path 55/56” corresponds to the claimed second ink supply path, the connecting member 57 does not suggest the claimed first ink supply path. For instance, as clearly shown in Fig. 3 of the reference, the “second ink supply path 55/56” does not has a protrusion and/or groove that axially terminates at a first open end of the “first ink supply path 57”.

In light of the discussion above, Applicants submit that claim 20 is patentable over Koto.

**B. Claim 21**

Since claim 21 has been cancelled without prejudice or disclaimer, the rejection of such claim is moot.

**C. Claim 22**

Applicants submit that claim 22 is patentable over Koto. For example, claim 22 states that the protrusion and/or groove axially extends from the second ink supply path, across the first open end of the first ink supply path, and into the first ink supply path. The Examiner contends that:

- (1) the portion of the chamber 55, which contains the porous member 54, corresponds to the claimed first ink supply path,
- (2) the portion of the chamber 55, which contains the ink guide passage 56, corresponds to the claimed second ink supply path,
- (3) the cross section of the chamber 55, located at the rightmost edge of the porous member 54, corresponds to the claimed first open end, and
- (4) the ink guide passage 56 corresponds to the claimed protrusion and/or groove.

However, as shown in Fig. 3 of Koto, the guide passage 56 terminates at the “first open end”.

Thus, the passage 56 does not correspond to the claimed protrusion and/or groove because it does not extend from the “second ink supply path 55/56”, across the first open end, and into the “first ink supply path 55/54”. Accordingly, claim 22 is patentable over the reference.

**D. Claim 23**

Applicants submit that claim 23 is patentable over Koto. For example, claim 23 states that a portion of the second ink supply path containing the protrusion and/or groove is in the form of a conical chamber. The Examiner contends that Koto discloses that the second ink supply path is in the form of a conical chamber. Specifically, he seems to maintain that the second ink supply passage comprises the chamber 55, member 57, and reservoir 58' and that the

rightmost portion of the reservoir 58' is conical. However, as clearly shown in Fig. 3 of Koto, the portion of the chamber 55 containing the passages 56 is not in the form of a conical chamber, and thus, claim 23 is patentable over Koto.

**E. Claim 24**

Applicants have rewritten claim 24 in independent form and have amended claim 24 for clarification purposes only. Also, Applicants submit that claim 24 is patentable over Koto.

For example, claim 24 states that the open end of the first ink supply path forms an axial terminus of the second ink supply path and states that a filter is located at an opposite axial terminus of the second ink supply path.

The Examiner contends that the filter 53 shown in Fig. 3 of Koto corresponds to the claimed filter, but Applicants submit that the Examiner is misinterpreting and/or misapplying the teachings of the reference.

For example, the Examiner seems to contend that the portion of Koto's chamber 55 containing the porous member 54 corresponds to the first ink supply path and that the portion of the chamber 55 that does not contain the member 54 corresponds the second ink supply path. Under such interpretation of the claim, the filter 53 would be located at an axial terminus of the first ink supply path and not the second ink supply path, as claimed. Accordingly, Applicants submit that claim 24 is patentable over Koto.

**F. Claims 25-27**

Since claims 25-27 depend upon claim 20, Applicants submit that they are patentable at least by virtue of their dependency.

**II. Rejection under 35 U.S.C. § 102(e) over U.S.P. 5,812,165 to Boyd et al. ("Boyd")**

Claim 28 has been rejected under 35 U.S.C. § 102(e) as being anticipated by Boyd. Applicants submit that claim 28 is not anticipated by (and would not have been obvious over) Boyd.

For example, claim 28 states that a protrusion and/or groove is axially provided to the second ink supply path and axially extends from the second ink supply path, across the first open end of the first ink supply path, and into the first ink supply path. The Examiner contends the grooves 50, standpipe 40b, and channel 38b disclosed in Boyd respectively correspond to the claimed protrusion and/or groove, second ink supply path, and first ink supply path. However, Applicants submit that the Examiner is misinterpreting and/or misapplying the teachings of the reference.

For example, claim 28 states that a protrusion and/or groove is axially provided to the second ink supply path and that the protrusion and/or groove axially extends from the second ink supply path, across the first open end of the first ink supply path, and into the first ink supply path. In other words, the same protrusion and/or groove that is provided in the second ink supply path must extend into the first ink supply path.

The Examiner contends that Fig. 8 somehow shows the protrusion and/or groove 50 extending from the second to the first ink supply path, but Applicants respectfully disagree. As

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described in Boyd, Fig. 8 shows that a rib 50a (or 50b) is contained in the ink channel 38a (or 38b). As best shown in Figs. 3 and 5, the rib 50b is different than the grooves 50 and is only contained in the channel 38b. Thus, the groove 50 and rib 50a (alone or in combination) do not extend across the first open end from the second ink supply path into the first ink supply path.

Accordingly, Applicants submit that claim 28 is patentable over Boyd.

### **III. Newly added claim**

Applicants have added new claim 29 to provide more varied protection for the present invention.

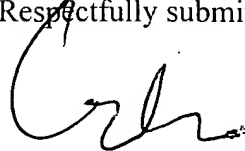
### **IV. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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**APPENDIX**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

**The claims are amended as follows:**

20. (Twice amended) An ink supply passage structure for supplying ink from an ink cartridge to a recording head, comprising:

a first ink supply path having a first open end, wherein said first ink supply path axially terminates at the first open end;

a second ink supply path connected to and extending from the first open end to be communicated with the first ink supply path, wherein the second ink supply path is at least as large in cross sectional area as the first ink supply path, and the first open end of the first ink supply path forms an axial terminus of the second ink supply path; and

a protrusion and/or groove axially provided to the second ink supply path, wherein the protrusion and/or groove axially extends along the second ink supply path and axially terminates at [is contiguous to at least] the first open end of the first ink supply path,

wherein the first ink supply path axially terminates at a longitudinal axis of the first ink supply path, [and]

wherein the longitudinal axis of the first ink supply path is substantially parallel to a longitudinal axis of the second ink supply path, and

wherein the first ink supply path is located upstream of the second ink supply path in a direction in which ink is supplied from the ink cartridge to the recording head.



22. (Once amended) An ink supply passage [according to claim 20,] structure comprising:

a first ink supply path having a first open end, wherein said first ink supply path axially terminates at the first open end;

a second ink supply path connected to and extending from the first open end to be communicated with the first ink supply path, wherein the second ink supply path is at least as large in cross sectional area as the first ink supply path, and the first open end of the first ink supply path forms an axial terminus of the second ink supply path; and

a protrusion and/or groove axially provided to the second ink supply path, wherein the protrusion and/or groove is contiguous to at least the first open end of the first ink supply path,

wherein the first ink supply path axially terminates at a longitudinal axis of the first ink supply path,

wherein the longitudinal axis of the first ink supply path is substantially parallel to a longitudinal axis of the second ink supply path, and

wherein the protrusion and/or groove axially extends [between] from the [first and] second ink supply path,[s] across the first open end, and into [of] the first ink supply path.

23. (Once amended) An ink supply passage structure according to claim 20, wherein a portion of the second ink supply path containing the protrusion and/or groove is in the form of a conical chamber.

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24. (Once amended) An ink supply passage structure [according to claim 20, further] comprising:

a first ink supply path having a first open end, wherein said first ink supply path axially terminates at the first open end;

a second ink supply path connected to and extending from the first open end to be communicated with the first ink supply path, wherein the second ink supply path is at least as large in cross sectional area as the first ink supply path, and the first open end of the first ink supply path forms an axial terminus of the second ink supply path;

a protrusion and/or groove axially provided to the second ink supply path, wherein the protrusion and/or groove is contiguous to at least the first open end of the first ink supply path,

wherein the first ink supply path axially terminates at a longitudinal axis of the first ink supply path, and

wherein the longitudinal axis of the first ink supply path is substantially parallel to a longitudinal axis of the second ink supply path; and

a filter located at an opposite [said] axial terminus of the second ink supply path, wherein said opposite axial terminus is opposite to said axial terminal of the second ink supply path.